



English

Quick Installation Guide

CFW100 Micro Drive



13230453

1 SAFETY INSTRUCTIONS

This quick installation guide contains the basic information necessary to commission the CFW100. It has been written to be used by qualified personnel with suitable training or technical qualification for operating this type of equipment. The personnel shall follow all the safety instructions described in this manual defined by the local regulations. Failure to comply with the safety instructions may result in death, serious injury, and/or equipment damage.

2 SAFETY WARNINGS IN THE MANUAL

NOTE!
It is not the intention of this guide to present all the possibilities for the application of the CFW100, as well as WEG cannot take any liability for the use of the CFW100 which is not based on this guide.
For further information about installation, full parameter list and recommendations, visit the website www.weg.net.

DANGER!
The procedures recommended in this warning have the purpose of protecting the user against death, serious injuries and considerable material damage.

ATTENTION!
The procedures recommended in this warning have the purpose of avoiding material damage.

NOTE!
The information mentioned in this warning is important for the proper understanding and good operation of the product.

High voltages are present.

Components sensitive to electrostatic discharge. Do not touch them.

Mandatory connection to the protective ground (PE).

Connection of the shield to the ground.

3 PRELIMINARY RECOMMENDATIONS

DANGER!
Always disconnect the main power supply before touching any electrical component associated to the inverter. Several components can remain charged with high voltages or remain in movement (fans) even after the AC power is disconnected or switched off. Wait at least ten minutes after turning off the input power for the complete discharge of the power capacitors. Always connect the grounding point of the inverter to the protection earth (PE). Connectors XCA and XCB do not present USB compatibility; therefore, they cannot be connected to USB doors.
These connectors serve only as interface between the CFW100 frequency inverter and its accessories.

NOTE!
Frequency Inverter may interfere with other electronic equipment. Follow the precautions recommended in manual available in www.weg.net.

Do not perform any withstand voltage test!
If necessary, contact the manufacturer.

ATTENTION!
Electronic boards have components sensitive to electrostatic discharges. Do not touch directly on components or connectors. If necessary, first touch the grounding point of the inverter, which must be connected to the protection earth (PE) or use a proper grounding strap.

ATTENTION!
When the inverter is stored for a long period, it becomes necessary to perform the capacitor reforming. Refer to the procedure recommended in www.weg.net.

4 ABOUT THE CFW100

The CFW100 frequency inverter is a high-performance product which allows speed and torque control of three-phase induction motors. This product provides the user with the options of vector (V/W) or scalar (V/f) control, both programmable according to the application.

5 TERMINOLOGY

Table 1: Terminology of the CFW100 inverters

Product and Series	Model Identification				Degree of Protection	Hardware Version	Software Version
	Frame Size	Rated Current	Phase Number	Rated Voltage			
E.g.: CFW100	A	01P6	S	2	20	---	---
Available options	A	01P6 = 1.6 A	S = single-phase supply	2 = 200...240 V			Blank = standard
	B	02P6 = 2.6 A					Sx = special software
	C	04P2 = 4.2 A					
	20 = IP20						Blank = standard Hx = special hardware

6 RECEIVING AND STORAGE

The CFW100 is supplied packed in a cardboard box. There is an identification label affixed to the outside of the package, identical to the one affixed to the side of the inverter.

Verify whether:
■ The CFW100 identification label corresponds to the purchased model.
■ Any damage occurred during transportation.

Report any damage immediately to the carrier.
If the CFW100 is not installed soon, store it in a clean and dry location (temperature between -25 °C and 60 °C (-13 °F and 140 °F)), with a cover to prevent dust accumulation inside it.

7 IDENTIFICATION LABEL

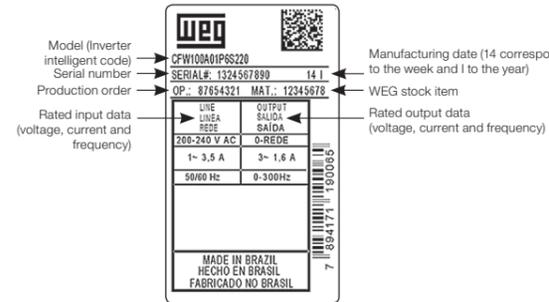
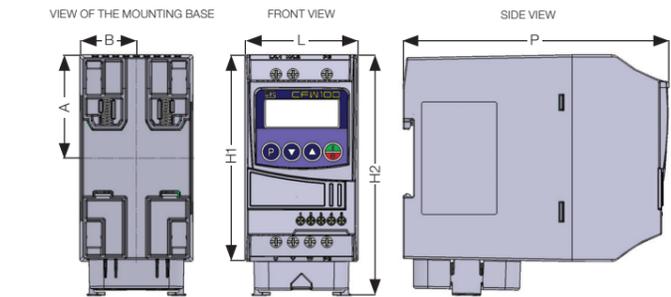


Figure 1: Description of the CFW100 identification label

8 DIMENSIONS



Frame Size	A	B	H1	H2	L	P	Weight
	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	kg (lb)
A	50 (1.97)	28 (1.10)	100 (3.94)	-	55 (2.17)	129 (5.08)	0.48 (1.05)
B	50 (1.97)	28 (1.10)	-	117 (4.60)	55 (2.17)	129 (5.08)	0.57 (1.25)
C	50 (1.97)	28 (1.10)	-	125.6 (4.94)	55 (2.17)	129 (5.08)	0.61 (1.34)

Dimension tolerance: ±1,0 mm (±0,039 in)

Figure 2: Inverter dimensions for mechanical installation

9 INSTALLATION AND CONNECTION

Environmental Conditions

- Avoid:**
- Direct exposure to sunlight, rain, high humidity or sea-air.
 - Inflammable or corrosive gases or liquids.
 - Excessive vibration.
 - Dust, metallic particles or oil mist.

Environment conditions permitted for the operation of the inverter:

- Temperature surrounding the inverter: 0 °C to 50 °C (32 °F to 122 °F) - IP20.
- For temperatures surrounding the inverter higher than the specifications above, it is necessary to apply of 2 % of current derating for each degree Celsius, limited to an increase of 10 °C (50 °F).
- Air relative humidity: 5 % to 95 % non-condensing.
- Maximum altitude: up to 1000 m (3,300 ft) - rated conditions.
- From 1000 m to 4000 m (3,300 ft to 13,200 ft) - 1 % of current derating for each 100 m above 1000 m of altitude.
- Pollution degree: 2 (according to EN50178 and UL508C), with non-conductive pollution. Condensation must not originate conduction through the accumulated residues.

10 ELECTRICAL INSTALLATION

DANGER!
■ The following information is merely a guide for proper installation. Comply with applicable local regulations for electrical installations.
■ Make sure the AC power supply is disconnected before starting the installation.
■ The CFW100 must not be used as an emergency stop device. Provide other devices for that purpose.

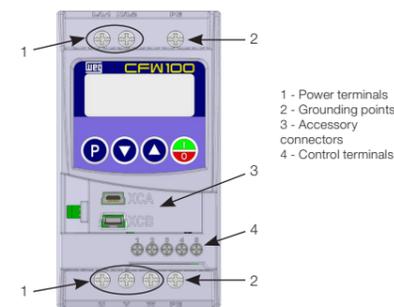


Figure 3: Power terminals, grounding points and recommended tightening torque

10.1 POWER CONNECTIONS

Description of the power terminals:
L/L1 and N/L2: AC power supply must be connected to L/L1 and N/L2.
U, V and W: connection for the motor.
PE: grounding connection.

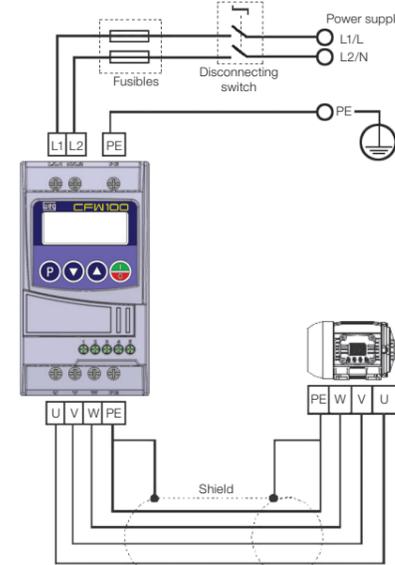


Figure 4: Power and grounding connections

The CFW100 is suitable for application in a circuit able to supply not more than 30.000 symmetric A_{rms} maximum of 240V, when protected by fuses classified as indicated below:

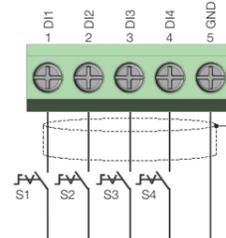
Table 2: List of models of CFW100 series, main electrical specifications

Inverter	Number of Input Phases	Power Supply Rated Voltage [Vrms]	Frame Size	Output Rated Current [Arms]	Maximum Motor [HP/kW]	Circuit Breaker [A]	Recommended J Type Fuse [A]	Power Wire Size [mm² (AWG)]	Grounding Wire Size [mm² (AWG)]
CFW100A01P6S220	1	200 ... 240	A	1.6	0.25/0.18	5.5	MPW25-3-D063	6 1.5 (16)	2.5 (14)
CFW100B02P6S220	1	200 ... 240	B	2.6	0.5/0.37	9.0	MPW25-3-U010	10 1.5 (16)	2.5 (14)
CFW100C04P2S220	1	200 ... 240	C	4.2	1/0.75	13.5	MPW25-3-U016	17.5 1.5 (16)	2.5 (14)

DANGER!
The inverter must be connected to a protective ground (PE). Use a minimum wire gauge for ground connection equal to the indicated in Table 2. Connect the inverter grounding connections to a ground bus bar, to a single ground point or to a common grounding point (Impedance ≤ 10 Ω). The neutral conductor of the line that feeds the inverter must be solidly grounded; however this conductor must not be used to ground the inverter. Do not share the grounding wiring with other equipment that operate with high currents (e.g.: high voltage motors, welding machines, etc.).

NOTE!
The wire gauges listed in Table 2 are guiding values. Installation conditions and the maximum permitted voltage drop must be considered for the proper wiring sizing.

10.2 CONTROL CONNECTIONS



(*) The digital input 3 (D13) can also be used as input in frequency (F).

Figure 5: Signals of control card connector of the C100A-20

For the correct connection of the control, use:

1. Gauge of the cables: 0.5 mm² (20 AWG) to 1.5 mm² (14 AWG).
2. Maximum torque: 0.5 N.m (4.50 lbf.in).
3. Wiring of the connector of the control board with shielded cable and separated from the other wiring (power, command in 110 V / 220 Vac, etc.)

10.3 INSTALLATIONS ACCORDING TO EUROPEAN DIRECTIVE OF ELECTROMAGNETIC COMPATIBILITY

The CFW100 inverter series, when properly installed, meet the requirements of the directive of the electromagnetic compatibility. These inverters were developed for professional applications only. Therefore, the emission limits of harmonic currents by the standards EN 61000-3-2 and EN 61000-3-2/A 14.

10.3.1 Conformal Installation

1. Shielded output cables (motor cables) with shield connected at both ends, motor and inverter, by means of a low impedance to high frequency connection. Maximum motor cable length and conducted and radiated emission levels according to Table 5. For more information (RFI filter commercial reference, motor cable length and emission levels) refer to the Table 5.
2. Shielded control cables, keeping the separation distance from other cables according to Table 3.2 the user's manual.
3. Grounding of the inverter according to instruction of the 3.2.4 Grounding Connections the user's manual.
4. Grounded power supply.
5. The inverter and external filter must be mounted on a common metal plate.
6. The wiring between filter and inverter must be as short as possible.
7. The grounding must be done according to recommendation of the CFW100 user's manual.
8. Use short wiring to ground the external filter or inverter.
9. Ground the mounting plate using a flexible braid as short as possible. Flat conductors have lower impedance at high frequencies.
10. Use sleeves for cable conduits whenever possible.

10.3.2 Emission and Immunity Levels

Table 3: Emission and immunity levels

EMC Phenomenon	Basic Standard	Level
Emission:		
Mains terminal disturbance voltage Frequency range: 150 kHz to 30 MHz	IEC/EN 61800-3	It depends on the inverter model on the length of the motor cable. Refer to Table 5
Electromagnetic radiation disturbance Frequency Range: 30 MHz to 1000 MHz		
Immunity:		
Electrostatic discharge (ESD)	IEC 61000-4-2	4 kV for contact discharge and 8 kV for air discharge
Fast transient-Burst	IEC 61000-4-4	2 kV / 5 kHz (coupling capacitor) input cables 1 kV / 5 kHz control cables and remote HMI cables 2 kV / 5 kHz (coupling capacitor) motor cables
Imunidade conduzida ("Conducted radio-frequency common mode")	IEC 61000-4-6	0.15 to 80 MHz; 10 V, 80 % AM (1 kHz) Motor, control and HMI cables
Surges	IEC 61000-4-5	1.2/50 µs, 8/20 µs 1 kV line-to-line coupling 2 kV line-to-ground coupling
Radio-frequency electromagnetic field	IEC 61000-4-3	80 to 1000 MHz 10 V/m 80 % AM (1 kHz)

Definition of Standard IEC/EM 61800-3: "Adjustable Speed Electrical Power Drives Systems"

Environments:

First Environment: environments that include domestic installations, as well as establishments directly connected without intermediate transformer to a low-voltage power supply network which supplies buildings used for domestic purposes.
Second Environment: includes all establishments other than those directly connected to a low voltage power supply network that supplies buildings used for domestic purposes.

Categories:

Category C1: inverters with a voltage rating less than 1000 V and intended for use in the First Environment.
Category C2: inverters with a voltage rating less than 1000 V intended for use in the First Environment, not provided with a plug connector or movable installations. They must be installed and commissioned by a professional.

NOTE!
A professional is a person or organization familiar with the installation and/or commissioning of inverters, including their EMC aspects.

Category C3: inverters with a voltage rating less than 1000 V and intended for use in the Second Environment only (not designed for use in the First Environment).

10.3.3 Characteristics of the RFI Filter

The CFW100 inverters, when installed with external filter, are used to reduce the conducted from the inverter to the power line in the high frequency band (>150). It is necessary to meet the maximum levels of conducted emission of electromagnetic compatibility standards, such as EN 61800-3 and EN 55011. For further information about the RFI filter model, refer to Table 4. The figure below demonstrate the connection of the filter to the inverter:

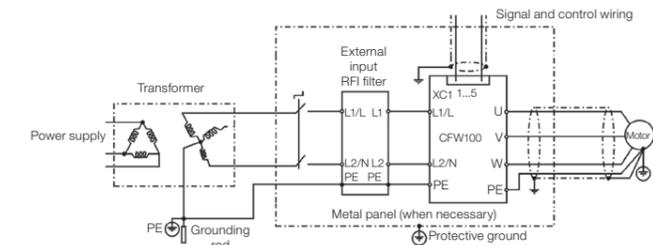


Figure 6: Connection of the RFI filter - general conditions

Table 4: External RFI filter models for CFW100

WEG Item	Name	Description
1312B410	CFW100-KFABC	External RFI filter kit WEG
-	-	Filter B84142A0010R000 Epcos (*)

(*) For Electrodiagnostica Radiation Disturbance use choke (T60006- L2016-W403 - VACUUMSCHMELZE).

Table 5: Conducted and radiated emission levels, and additional information

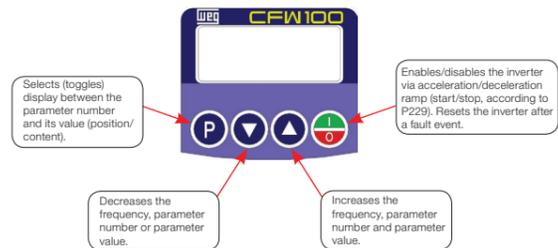
Inverter Model	Conducted Emission - Maximum Motor Cable Length		Radiated Emission
	Category C2	Category C3	Category C3
1 CFW100A01P6S220	1 m (39 in)	10 m (393 in)	10 m (393 in)
2 CFW100B02P6S220			
3 CFW100C04P2S220			

(1) The switching frequency is 5 KHz.

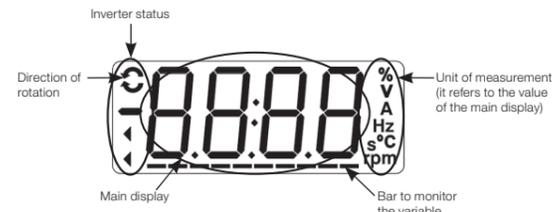
10.4 ACCESSORIES

The accessories are hardware resources that can be added in the application with the CFW100. The accessories are incorporated to the inverters in an easy and quick way by using the concept "Plug and Play". The accessory must be installed or modified with the inverter de-energized. They may be ordered separately, and are sent in their own package containing the components and manuals with detailed instructions for their installation, operation and setting.

11 USE OF THE KEYPAD TO OPERATE THE INVERTER



11.1 INDICATIONS OF DISPLAY



11.2 OPERATING MODES OF THE HMI

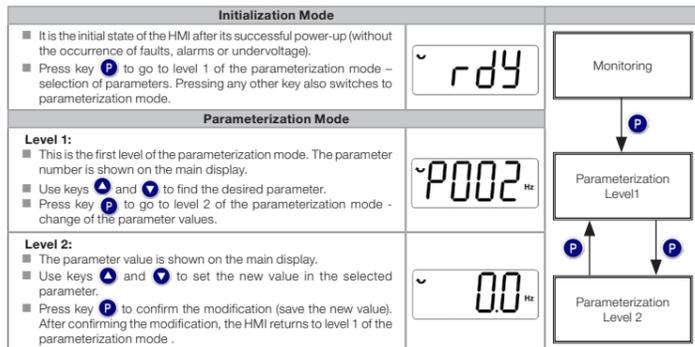


Figure 7: HMI operating modes

12 START-UP PREPARATION

DANGER! Always disconnect the main power supply before making any connection.

- Check if the power, grounding and control connections are correct and firm.
- Remove all the materials left behind from the installation work from inside the inverter or the cabinet.
- Verify the motor connections and if its voltage and current are within the inverter rated value.
- Mechanically uncouple the motor from the load. If the motor cannot be uncoupled, make sure that any speed direction (forward or reverse) will not result in personnel injury and/or equipment damage.
- Close the inverter or cabinet covers.
- Measure the power supply and verify if it is within the allowed range.
- Apply power to the input: close the input disconnecting switch.
- Check the result of the first time power-up:

The HMI display indicates:



12.1 BASIC APPLICATION

The following table contains the basic programming to operate the CFW100 via product HMI:

Seq	Display Indication/Action	Seq	Display Indication/Action
1	Initialization mode. Press key P to enter the first level of the parameterization mode. Press keys A or V to select the parameter P100.	2	Press key P if you need to change the content of P100 - "Acceleration Time" or press key A for the next parameter.
3	If necessary, change the content of "P101 - Deceleration Time". Use key A to select the parameter P133.	4	If necessary, change the content of "P133 - Minimum Speed". Press key A for the next parameter.
5	If necessary, change the content of "P134 - Maximum Speed". Press key A for the next parameter.	6	If necessary, change the content of "P135 - Output Maximum Current". Press key V to select parameter P002.
7	Press key P to view the parameter content.	8	Press key that the motor will accelerate up to 3.0 Hz (factory default setting of P133 - Minimum Frequency). Press A and hold it until it reaches 60.0 Hz.
9	Press key The motor will decelerate to a stop.	10	When the motor stops, the display will indicate "ready".

12.2 TYPE OF CONTROL V/f (P202 = 0)

Seq	Display Indication/Action	Seq	Display Indication/Action
1	Initialization mode. Press key P to enter the first level of the parameterization mode.	2	Press keys A or V to select parameter P202.
3	Press key P if you need to change the content of "P202 - Type of Control" for P202 = 0 (V/f). Press key A to select parameter P401.	4	If necessary, change the content of parameter "P401 - Motor Rated Current" according to the nameplate. Press key A for the next parameter.
5	If necessary, change the content of "P402 - Motor Rated Speed". Press key A for the next parameter.	6	If necessary, change the content of "P403 - Motor Rated Frequency".

13 TECHNICAL SPECIFICATIONS

POWER DATA

- Power Supply:
- Tolerance: -15 % to +10 %.
 - Frequency: 50/60 Hz (48 Hz to 62 Hz).
 - Phase imbalance: ≤ 3 % of the rated phase-to-phase input voltage.
 - Overvoltage according to Category III (EM 61010/UL 508C).
 - Transient voltages according to Category III.
 - Maximum of 10 connections per hour (1 every 6 minutes).
 - Typical efficiency: ≥ 97 %.

14 ELECTRONICS/GENERAL DATA

Table 6: Electronics/general data

Control	Method	Types of control: - V/f (Scalar) - VVW: voltage vector control - PWM SVM (Space Vector Modulation)
Performance	Output frequency	0 to 300 Hz, resolution of 0.1 Hz
	V/f Control	Speed regulation: 1 % of the rated speed (with slip compensation) Speed variation range: 1:20
Inputs	Vector control (VVW)	Speed regulation: 1 % of the rated speed Speed variation range: 1:30
	Digital	4 isolated inputs Maximum input voltage of 30 Vdc Input current: - 11 mA Maximum input current: -20 mA
Safety	Protection	Output overcurrent/short-circuit
		Under/overvoltage
		Motor overload
		Overtemperature in the power module (IGBTs)
		Fault / external alarm
Integral keypad (HMI)	Standard keypad	4 keys: Start/Stop, Up arrow, Down arrow and Programming
		LCD Display View/editing of parameters Indication accuracy: - current: 5 % of the rated current - speed resolution: 0.1 Hz
Enclosure	IP20	Frame Sizes A, B and C

15 CONSIDERED STANDARDS

Table 7: Considered standards

Category	Standards
Safety standards	UL 508C - power conversion equipment UL 840 - insulation coordination including clearances and creepage distances for electrical equipment EN61800-5-1 - safety requirements electrical, thermal and energy EN 60178 - electronic equipment for use in power installations EN 60204-1 - safety of machinery. Electrical equipment of machines. Part 1: general requirements EN 60146 (IEC 146) - semiconductor converters EN 61800-2 - adjustable speed electrical power drive systems - Part 2: general requirements - rating specifications for low voltage adjustable frequency AC power drive systems
Mechanical standards	EN 60529 - degrees of protection provided by enclosures (IP code) UL 50 - enclosures for electrical equipment
Electromagnetic compatibility (EMC) standards (*)	EN 61800-3 - adjustable speed electrical power drive systems - part 3: EMC product standard including specific test methods EN 55011 - limits and methods of measurement of radio disturbance characteristics of industrial, scientific and medical (ISM) radio-frequency equipment CISPR 11 - industrial, scientific and medical (ISM) radio-frequency equipment - electromagnetic disturbance characteristics - limits and methods of measurement EN 61000-4-2 - electromagnetic compatibility (EMC) - part 4: testing and measurement techniques - section 2: electrostatic discharge immunity test EN 61000-4-3 - electromagnetic compatibility (EMC) - part 4: testing and measurement techniques - section 3: radiated, radio-frequency, electromagnetic field immunity test EN 61000-4-4 - electromagnetic compatibility (EMC) - part 4: testing and measurement techniques - section 4: electrical fast transient/burst immunity test EN 61000-4-5 - electromagnetic compatibility (EMC) - part 4: testing and measurement techniques - section 5: surge immunity test EN 61000-4-6 - electromagnetic compatibility (EMC) - part 4: testing and measurement techniques - section 6: immunity to conducted disturbances, induced by radio-frequency fields.

(*) Standards met with the installation of the external RFI filter. For further details refer to www.weg.net.

16 MAIN PARAMETERS

The table below contains the mains parameters of the CFW100.

Param.	Description	Adjustable Range	Factory Setting	Prop.
P000	Access to Parameters	0 to 9999	1	
P001	Speed Reference	0 to 9999		ro
P002	Output Speed (Motor)	0 to 9999		ro
P003	Motor Current	0.0 to 10.0 A		ro
P004	DC Link Voltage (Ud)	0 to 524 V		ro
P005	Output Frequency (Motor)	0.0 to 300.0 Hz		ro
P006	Inverter Status	0 = Ready 1 = Run 2 = Undervoltage	3 = Fault 4 = Not Used 5 = Configuration	ro
P007	Output Voltage	0 to 240 V		ro
P011	Active Current	-10.0 to 10.0 A		ro
P012	DlB to Dl1 Status	0 to FF (hexa) Bit 0 = Dl1 Bit 1 = Dl2 Bit 2 = Dl3 Bit 3 = Dl4	Bit 4 = Dl5 Bit 5 = Dl6 Bit 6 = Dl7 Bit 7 = Dl8	ro
P022	Fl Value in Hz	1 to 3000 Hz		ro
P023	Main SW Version	0.00 to 99.99		ro
P030	Module Temperature	-200.0 to 200.0 °C		ro
P037	Motor Overload lkt	0.0 to 100.0 %		ro
P047	CONFIG Status	0 to 999		ro
P048	Present Alarm	0 to 999		ro
P049	Present Fault	0 to 999		ro
P050	Last Fault	0 to 999		ro
P100	Acceleration Time	0.1 to 999.9 s	5.0	
P101	Deceleration Time	0.1 to 999.9 s	10.0	
P120	Speed Ref. Backup	0 = Inactive 1 = Active 2 = Backup by P121	1	
P121	Reference via HMI	0.0 to 300.0 Hz	3.0 Hz	
P124	Multispeed Ref. 1	-300.0 to 300.0 Hz	3.0 Hz	
P125	Multispeed Ref. 2	-300.0 to 300.0 Hz	10.0 (5.0) Hz	
P126	Multispeed Ref. 3	-300.0 to 300.0 Hz	20.0 (10.0) Hz	
P127	Multispeed Ref. 4	-300.0 to 300.0 Hz	30.0 (20.0) Hz	
P128	Multispeed Ref. 5	-300.0 to 300.0 Hz	40.0 (30.0) Hz	
P129	Multispeed Ref. 6	-300.0 to 300.0 Hz	50.0 (40.0) Hz	
P130	Multispeed Ref. 7	-300.0 to 300.0 Hz	60.0 (50.0) Hz	
P131	Multispeed Ref. 8	-300.0 to 300.0 Hz	66.0 (55.0) Hz	
P133	Minimum Frequency	0.0 to 300.0 Hz	3.0 Hz	
P134	Maximum Frequency	0.0 to 300.0 Hz	66.0 (55.0) Hz	
P135	Maximum Output Current	0.0 to 10.0 A	1.5xI _{nom}	
P136	Manual Torque Boost	0.0 to 30.0 %	0.0 %	V/f
P137	Automatic Torque Boost	0.0 to 30.0 %	0.0 %	V/f
P138	Slip Compensation	-10.0 to 10.0 %	0.0 %	V/f
P139	Output Current Filter	0 to 9.999 s	0.005 s	
P140	Slip Com. Filter	0 to 9.999 s	0.5 s	VVW
P142	Maximum Output Voltage	0.0 to 100.0 %	100.0 %	cfg, V/f
P143	Intermediate Output Voltage	0.0 to 100.0 %	50.0 %	cfg, V/f
P145	Field Weakening Start Frequency	0.0 to 300.0 Hz	60.0 (50.0) Hz	cfg, V/f
P146	Intermediate Frequency	0.0 to 300.0 Hz	30.0 (25.0) Hz	cfg, V/f
P156	Overload Current	0.1 to 2xI _{nom}	1.2xI _{nom}	
P202	Type of Control	0 = V/f 1 = V/f Quadratic 2 to 4 = Not Used 5 = VVW	0	cfg
P204	Load/Save Parameters	0 to 4 = Not Used 5 = Load 60 Hz 6 = Load 50 Hz 7 = Load User 8 = Not Used	9 = Save User 10 = Not Used 11 = Load Default SoftPLC 12 to 13 = Reserved	0
P220	LOC/REM Selection Source	0 = Always Local 1 = Always Remote 2 to 3 = Not Used 4 = DlX 5 = Serial/USB (LOC)	6 = Serial/USB (REM) 7 to 8 = Not Used 9 = CO/DN (LOC) 10 = CO/DN (REM) 11 = SoftPLC	0
P221	LOC Reference Sel.	0 = HMI Keys 1 = AI1 2 to 3 = Not Used 4 = FI 5 to 6 = Not Used 7 = E.P. 8 = Multispeed 9 = Serial/USB	10 = Not Used 11 = CO/DN 12 = SoftPLC 13 = Not Used 14 = AI1 > 0 15 to 16 = Not Used 17 = FI > 0	0

Param.	Description	Adjustable Range	Factory Setting	Prop.
P222	REM Reference Sel.	See options in P221	2	cfg
P223	LOC Rotation Sel.	0 = Not Used 1 = Always REV 2 = Not Used 3 = Not Used 4 = DlX 5 = Serial/USB (FWD)	6 = Serial/USB (REV) 7 to 8 = Not Used 9 = CO/DN (FWD) 10 = CO/DN (REV) 11 = Not Used 12 = SoftPLC	0
P263	Dl1 Input Function	25 = Regul. DC Link 26 = Lock Prog. 27 to 31 = Not Used 32 = 2 nd Ramp Multispeed 33 = 2 nd Ramp E.P. Ac. 34 = 2 nd Ramp E.P. De. 35 = 2 nd Ramp FRW Run 36 = 2 nd Ramp Rev Run 37 = Turn ON / Ac. E.P. 38 = De. E.P. / Turn OFF 39 = Stop 40 = Safety Switch 41 = Function 1 Application 42 = Function 2 Application 43 = Function 3 Application 44 = Function 4 Application 45 = Function 5 Application 46 = Function 6 Application 47 = Function 7 Application 48 = Function 8 Application	1	cfg
P264	Dl2 Input Function	See options in P263	8	cfg
P265	Dl3 Input Function	See options in P263	0	cfg
P266	Dl4 Input Function	See options in P263	0	cfg
P295	Inv. Rated Current	1.6 to 15.2 A	According to inverter model	ro
P296	Line Rated Voltage	0 to 1 = Reserved 2 = 200 - 240 V	2	ro, cfg
P297	Switching Frequency	2.5 to 15.0 kHz	5.0 kHz	
P401	Motor Rated Current	0.0 to 10.0 A	1.4 A	cfg
P402	Motor Rated Speed	0 to 9999 rpm	1720 (1310) rpm	cfg
P403	Motor Rated Frequency	0 to 300 Hz	60 (50) Hz	cfg

17 FAULTS AND ALARMS

Most common faults and alarms

Fault / Alarm	Description	Possible Causes
A046 Motor Overload	Motor overload alarm	Settings of P156 is too low for the used motor Overload on the motor shaft
A050 Power Module Overtemperature	Overtemperature alarm from the power module temperature sensor	High temperature at IGBTs (P030 > 110 °C) High ambient temperature around the inverter (>50 °C (>122 °F)) and high output current Blocked or defective fan Heatsink is too dirty, preventing the air flow
A090 External Alarm	External alarm via DlX (option "No External Alarm" in P26x)	Wiring on Dl1 to Dl4 inputs are open or have poor contact
A700 Remote HMI Communication Fault	No communication with remote HMI, but here is frequency command or reference for this source	Check if the communication interface with the HMI is properly configured in parameter P312 HMI cable disconnected
F021 Undervoltage on the DC Link	Undervoltage fault on the intermediate circuit	Wrong voltage supply; check if the data on the inverter label comply with the power supply and parameter P296 Supply voltage too low, producing voltage on the DC link below the minimum value (in P004): Ud < 200 Vdc in 200 / 240 Vac Phase fault in the input Fault in the pre-charge circuit
F022 Overvoltage on the DC Link	Overvoltage fault on the intermediate circuit	Wrong voltage supply; check if the data on the inverter label comply with the power supply and parameter P296 Supply voltage is too high, producing voltage on the DC link above the maximum value (in P004): Ud > 410 Vdc in 200 / 240 Vac Load inertia is too high or deceleration ramp is too fast P151 setting is too high
F031 Fault of communication with the accessory	Main control cannot establish the communication link with accessory	Accessory damaged Poor connection of the accessory Problem in the identification of the accessory; refer to P027
F051 IGBTs Overtemperatures	Overtemperature fault measured on the temperature sensor of the power pack	High temperature at IGBTs (P030 > 120 °C) High ambient temperature around the inverter (>50 °C (>122 °F)) and high output current Blocked or defective fan Heatsink is too dirty, preventing the air flow
F070 Overcurrent/ Shortcircuit	Overcurrent or short-circuit on the output, DC link or braking resistor	Short-circuit between two motor phases IGBTs module in short-circuit or damaged Start with too short acceleration ramp Start with motor spinning without the Flying Start function
F072 Motor Overload	Motor overload fault (60 s in 1.5 x Inom)	P156 setting is too low in relation to the motor operating current Overload on the motor shaft
F080 CPU Fault (Watchdog)	Fault related to the supervision algorithm of the inverter main CPU	Electric noise Inverter firmware fault
F081 Fault on the Save User function	Fault in the attempt to save the user parameter table	Attempt to save (P204 = 9) more than 32 parameters (with values different from the factory default) on the User parameter table The Function Saves User is blocked
F082 Fault in the Copy Function (MMF)	Fault in the copy of parameters	Attempt to copy the parameters from the Flash Memory Module to the inverter with different software versions
F084 Auto-diagnosis Fault	Fault related to the automatic identification algorithm of the inverter hardware	Poor contact in the connection between the main control and the power pack Hardware not compatible with the firmware version Defect on the internal circuits of the inverter
F091 External Fault	External fault via DlX ("No External Fault" in P26x)	Wiring on Dl1 to Dl4 inputs are open or have poor contact
F701 Remote HMI communication fault	No communication with the remote HMI; however, there is command or frequency reference for this source	Check that the HMI communication interface is properly configured in parameter P312 HMI cable disconnected

NOTE! For further information, refer www.weg.net.